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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,132	01/19/2001	Izumi Fukuda	72764{SC159501}	9483

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EXAMINER

NGUYEN, PHU K

ART UNIT PAPER NUMBER

2671

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/766,132

Applicant(s)

FUKUDA, IZUMI

Examiner

Phu K. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.



Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/5/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over ENDO et al. (6,654,014).

As per claim 1 Endo teaches the claimed "entertainment apparatus which displays a moving picture on a display screen of a display device, the moving picture being obtained by photographing an object moving in a virtual three dimensional field, according to manipulation contents of a manipulator received via a controller" (Endo, column 14, line 59 to column 15, line 9), comprising: "object position calculating means for sequentially calculating a position and a moving direction of said object in said three dimensional field" (Endo, column 15, lines 5-7); and "setup means for determining a setup point in said three dimensional field every time the position and moving direction of said object are calculated by said object position calculating means, while taking a setup point obtained at least in the last calculation into consideration" (Endo, column 17, lines 26-42). It is noted that Endo does not teach the view is set up "by the use of a virtual camera". However, it would have been obvious to a person of ordinary skill in the art to configure Endo's bird's-eye view display as claimed "virtual camera" because the image provided from a bird's-eye view, showing an identical result as from a virtual camera, enhances the realistic of 3D scene display.

Applicant's arguments filed June 14, 2004 have been fully considered but they are not deemed to be persuasive. Applicant argues that Endo only calculates the current position, but does not take the previous position into consideration in the calculation of the current position. However, given Endo's current view point position are updated according to the current user position (figure 16B), it would have been obvious to update the current user position at time $(T + \Delta T)$ by adding the changes $(\Delta X, \Delta Y, \Delta Z)$ to the position (X, Y, Z) at time T because it simplifies the calculation by avoiding the repetition of calculation of motion on the whole coordinate system.

Claim 2 adds into claim 1 "means for settling a camera chasing point at a position higher by a predetermined value H than a position to the rear of said object from the position thereof by a distance K (Endo, figure 16B, column 11, lines 23-48), the position being on a line which passes through a newly calculated position of said object by said object position calculating means and is parallel with a newly calculated moving direction of said object, and wherein said camera setup means settles a setup point of said virtual camera at a position approaching said camera chasing point from the setup point of said virtual camera obtained at least in the last calculation" which Endo does not explicitly teach. However, it would have been obvious in view of Endo's dependency of view point's position of the bird's-view display on the object's position and moving direction because the viewpoint's position and direction is equivalent to the position and direction of the virtual camera; furthermore, such use of position and direction of camera provides a realistic vision of user through the images collected by

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the camera. Applicant argues that the cited reference does not the specific set up position of the camera as claimed. However, in figure 16A, the moving direction from the current position to the destination depends on the current position, and therefore, the last calculation; furthermore, the claimed camera position is equivalent to Endo's viewpoint (T_x, T_y, T_z) which are defined at a fixed distant of the user position (x, y, z) .

Claim 3 adds into claim 2 "said camera setup means settles the setup point of the virtual camera at a position approaching said camera chasing point from the setup point of said virtual camera obtained at least in the last calculation by a distance L/M , the distance L/M being obtained by dividing a distance L , which is between said camera chasing point and said virtual camera setup point, obtained at least in the last calculation, by a predetermined value M " which Endo does not explicitly teach. However, it would have been obvious in view of Endo's viewpoint calculation (Endo, column 16, lines 33-65) because the equivalent of the virtual camera and the perspective projection or the bird's eye view and by providing the depend of the image on the distant L , it provides a realistic vision of the scene to the user.

Claim 4 adds into claim 3 "said camera setup means sets said distance K so as to be shorter as a moving speed of said object in said three dimensional field is increased" which Endo does not teach. However, it would have been obvious in view of Endo's viewpoint calculation (Endo, column 16, lines 33-65) because the equivalent of the virtual camera and the perspective projection or the bird's eye view and by changing

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the distance K according to the inverse of the moving speed, it provides a realistic perspective projection of the scene to the user.

Claim 5 adds into claim 1 "said camera setup means includes means for settling a camera reference point at a position in front of the position of the object by a distance J , the position being on a line passing through a newly calculated position of said object by said object position calculating means, and the line being parallel with a newly calculated moving direction of said object, and wherein said camera setup means settles a sight line direction of the virtual camera so that said virtual camera is pointed at said camera reference point" which Endo does not explicitly teach. However, it would have been obvious in view of Endo's viewpoint calculation (Endo, column 15, lines 10-55) because the equivalent of the virtual camera and the perspective projection or the bird's eye view. Furthermore, in figure 16A, the moving direction from the current position to the destination depends on the current position, and therefore, the last calculation; furthermore, the claimed camera position is equivalent to Endo's viewpoint (T_x , T_y , T_z) which are defined at a fixed distant of the user position (x , y , z). By providing the depend of the image on the moving direction, it provides a realistic perspective vision of the scene to the user

Claim 6 adds into claim 5 "said camera setup means sets said distance J so as

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to be longer as a moving speed of said object in said three dimensional field is increased" which Endo does not teach. However, it would have been obvious in view of Endo's viewpoint calculation (Endo, column 16, lines 33-65) because the equivalent of the virtual camera and the perspective projection or the bird's eye view and by changing the distance J according to the moving speed, it provides a realistic perspective projection of the scene to the user.

Claim 7 adds into claim 1 "said camera setup means rotates said virtual camera around a sight line direction of said virtual camera as an axis in response to a rotation of said object around the moving direction as an axis" which Endo does not teach. However, it would have been obvious in view of Endo's viewpoint calculation (Endo, column 15, lines 1-9) because Endo view point direction depends on the moving direction, and therefore, it will change accordingly with the change of moving direction.

Claims 8-14 claim "a storage medium storing a program which is read out and executed by a computer" (Endo, column 7, lines 14-124), said program being read out and executed by said computer to realize means on said computer, performing the functions of the system of claims 1-7; therefore, they are rejected under the same reason.

Claim 15 claims "a program product which is read out and executed by a computer" (Endo, column 6, line 61 to column 7, line 24; column 8, lines 33), said program product being executed by said computer to realize means on said computer of claim 1; therefore, it is rejected under the same reason.

Claim 16 claims a method in which the steps are the functions performed by the computer in claim 1; therefore, it is rejected under the same reason.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

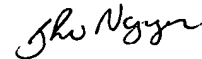
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu K. Nguyen whose telephone number is (703)305 - 9796. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on (703)305-9798. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phu K. Nguyen
September 18, 2004